UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

MEMORANDUM

FROM: Tanja Crk and Lindsay Guzzo
TO: The Petition Response Record
DATE: May 31, 2017
RE: Final Response to NWEA Petition for Rulemaking Under the Clean Water Act to Update the Water Quality Criteria for Toxics in the State of Washington

The Northwest Environmental Advocates' (NWEA's) October 28, 2013 petition requests that the EPA take specific steps to update water quality criteria for toxics to protect human health and aquatic life in Washington. As articulated in the EPA's denial of NWEA's petition, the EPA does not believe that the use of federal rulemaking authority is the most effective or practical means of addressing NWEA's concerns at this time. The purpose of this memo is to support the EPA's denial of NWEA's petition request by providing additional information regarding Washington's aquatic life criteria.

Aquatic Life Criteria in Washington

The EPA acknowledges that Ecology has not updated the majority of the state's aquatic life criteria since the 1992 National Toxics Rule and that it is important for states and tribes to review the latest science, including the EPA's national 304(a) criteria recommendations, and update criteria in a timely manner. However, the rationale below helps support the denial of NWEA's petition since, in many instances, a federal rule promulgating updated aquatic life criteria for Washington would not increase protection of aquatic life from toxic pollutants.

Priority Pollutants

Ecology has numeric aquatic life criteria for all priority pollutants for which the EPA has corresponding 304(a) criteria, consistent with CWA section 303(c)(2)(B), with the exception of acrolein.

Ecology has freshwater aquatic life criteria in effect for CWA purposes for twenty eight pollutants, twenty three of those pollutants are priority pollutants; similarly, Ecology has marine aquatic life criteria for twenty six pollutants, twenty two of which are priority pollutants. Approximately half of the priority pollutant freshwater aquatic life criteria and most of the priority pollutant marine water aquatic life criteria are equivalent to or more stringent than the EPA's current 304(a) recommendations. The italicized values in shaded cells in **Table 1** indicate where Washington's existing aquatic life criteria are less stringent than the EPA's corresponding 304(a) recommendations.

Table 1. Priority pollutant criterion comparison (in µg/L). Only pollutants for which at least one aquatic life criterion is less stringent than the 304(a) criterion and acrolein are listed for freshwater and marine water criteria.

Pollutant	Acute Criterion		Chronic Criterion		WA HHC Water + Org	WA HHC Org only
	WA ALC	304(a)	WA ALC	304(a)		

Freshwater						
Acrolein	na	3	na	3	**1**	1.1
Ammonia[a]	*24,100*	17,000	7	1,900	na	na
Arsenic	*360*	340	*190*	150	**0.018**	0.14
Cadmium[b]	*3.7*	1.8	*1.03*	0.72	na	na
Chromium III[b]	549	570	*178*	74	na	na
Copper[c, d]	17	BLM	11	BLM	1,300	na
Dieldrin	*2.5*	0.24	0.0019	0.056	**$7.0x10^{-8}$**	$7.0x10^{-8}$
Endrin	*0.18*	0.086	0.0023	0.036	**0.002**	0.002
Lindane	*2*	0.95	0.08	na	**0.43**	0.43
Mercury	*2.1*	1.4	0.012	0.77	na	**0.03**
Nickel[e]	*1415*	470	*157*	52	**80**	100
Pentachlorophenol (PCP)[f]	*20*	19	13	15	**0.002**	0.002
Selenium[c]	20	Other	5	Other	60	200
Silver[g]	*3.45*	3.2	na	na	na	na
Marine water						
Acrolein	na	--	na	--	1	**1.1**
Cadmium	*42*	33	*9.3*	7.9	na	na

WA: Washington State, ALC: Aquatic Life Criterion, and HHC: Human Health Criterion.
HHC that are more stringent than the corresponding ALC are noted in **bold**.
WA's ALC that are less stringent than the EPA's corresponding 304(a) recommendations are highlighted and *italicized*.
[a] Equation based (see spreadsheet). Assuming pH = 7 and salmonids present.
[b] Equation based (see spreadsheet). Assuming hardness = 100
[c] For copper and selenium, the form of EPA's current 304(a) recommended criteria is different than the form of Washington's existing criteria, such that it is not possible to directly compare the stringency of the values. In some instances, depending on ambient water chemistry, Washington's criteria may be more stringent than EPA's recommended criteria, and vice versa.
[d] BLM: Biotic Ligand Model
[e] Though HHC are more stringent than existing ALC for nickel, the chronic ALC 304(a) value is slightly more stringent than the HHC.
[f] Equation based (see spreadsheet). Assuming pH = 7.8
[g] WA adopted EPAs equation which had a typo[1] (and resulted in an ALC of 3.45 µg/L). EPA has since fixed the typo, which is why the 304(a) criterion (3.2 µg/L) is apparently more stringent than the ALC.

In the majority of these cases, the corresponding recently updated human health criteria are more stringent than the applicable aquatic life criteria and the corresponding aquatic life 304(a) recommendations (see bold values in **Table 1**). Because waters in the state of Washington are protected for both human health and aquatic life uses, these more restrictive human health criteria will drive pollutant controls, and revised aquatic life criteria for those pollutants would not result in changes to water quality.

The priority pollutants for which Washington's aquatic life criteria may be less stringent than the corresponding aquatic life 304(a) recommendations and for which Washington's applicable human health criteria may be less stringent than the applicable aquatic life criteria include the following: cadmium (freshwater and marine), chromium III (freshwater chronic), copper (freshwater), selenium (freshwater), and silver (freshwater acute). The EPA issued its recommended 304(a) criteria for cadmium, copper, and

[1] See Appendix B in https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table whereby the bA term in the following equation CMC = exp{mA[*ln*(hardness)]+bA}(CF) was erroneously set at -6.52, leading to a WA criterion of 3.45 µg/L. The correct value for the bA term is -6.59, leading to a criterion of 3.2 µg/L.

selenium within the last ten years, whereas the 304(a) recommended criteria for chromium III and silver are more than 20 years old.

While the EPA encourages states to consider the EPA's updates to 304(a) recommendations (for priority pollutants and all other pollutants) and revise their state water quality standards accordingly, the EPA has not interpreted CWA § 303(c)(2)(B) as establishing a default assumption that EPA must promulgate federal criteria for any state that does not timely adopt changes based on the EPA's criteria recommendations for priority pollutants issued since the Water Quality Act of 1987.[2] In 2015, EPA revised its implementing regulations at 40 CFR 131.20(a) to require that if states choose not to adopt new or revised criteria during their triennial review for any pollutants for which the EPA has published new or updated criteria recommendations under CWA section 304(a), they must explain their decision when reporting the results of their triennial review to the EPA under CWA section 303(c)(1) and 40 CFR 131.20(c).

For cadmium and selenium, the EPA's 304(a) recommendations were just released in 2016, therefore, it is reasonable that Washington would need time to consider the EPA's recommendations before incorporating updates to the state criteria. For copper, the EPA held a workshop in Seattle in 2015 to discuss implementation considerations associated with the EPA's 304(a) recommended copper criteria, the copper Biotic Ligand Model (BLM). Washington attended the workshop, and the EPA expects that Washington will use information gleaned from Oregon's adoption of the BLM in 2016 and Idaho's on-going efforts to adopt the BLM to inform Washington's own adoption of the BLM in the near future.

For chromium III and silver, NWEA has provided EPA with no information to suggest that updated criteria for chromium III or silver are immediately necessary in Washington, though NWEA has alleged ongoing impacts resulting from the absence of an update.

Non-Priority Pollutants

As noted above, the requirements under CWA section 303(c)(2)(B) only pertain to priority pollutants. More broadly, CWA section 303(c)(2)(A) requires that states adopt appropriate designated uses, and water quality criteria that protect those uses. The decision of whether criteria for certain non-priority pollutants are necessary to protect a state's designated uses is generally left to state discretion, but certainly encouraged especially in instances where the EPA has developed 304(a) recommendations for such a pollutant. The following non-priority pollutants have 304(a) recommendations but lack corresponding state aquatic life criteria in Washington: alkalinity (freshwater chronic), aluminum (freshwater acute and chronic), carbaryl (freshwater acute and chronic; marine acute), diazinon (freshwater and marine), iron (freshwater chronic), malathion (freshwater and marine chronic), nonylphenol (freshwater and marine), sulfide-hydrogen sulfide (freshwater and marine chronic), and tributyltin (freshwater and marine); the case is the same for the following banned, cancelled or phased out pesticides: demeton (freshwater and marine chronic), guthion (freshwater and marine chronic), methoxychlor (freshwater and marine chronic), and mirex (freshwater and marine chronic).

[2] EPA construed the 1987 CWA amendments as a signal that "Congress wanted toxics criteria in the State's water quality standards," motivated by Congress' concern in 1987 that the status quo for many states was to rely solely on technology-based controls to address priority pollutants, due to those states' complete lack of numeric water quality standards for priority pollutants. See 57 FR 60856, 60852 (1992). In the National Toxics Rule, EPA only construed "303(c)(2)(B) requirements" as necessitating updates to match newer recommended criteria in cases where existing criteria had been approved prior to 1987. See 57 FR 60860 (1992).

To ensure public transparency in water quality standards decisions, as mentioned above for priority pollutants, the EPA's regulations require states to explain their choice to not adopt criteria during their triennial review for any pollutants for which the EPA has published new or revised 304(a) recommendations. For ammonia and bacteria (two non-priority pollutants that may reasonably be expected to be present in Washington's waters, and where the EPA's 304(a) recommendations were last updated in 2013 and 2012, respectively), the EPA sent a letter to Washington on May 16, 2014 recommending and emphasizing the importance that the state prioritize adoption of criteria for these pollutants.

In some instances, such as for the chronic ammonia criterion in waters where salmonids are present, Washington's existing criteria may be more stringent than the EPA's national 304(a) recommendation for that pollutant. Therefore, the state may choose not to prioritize revision of the criterion at this time if there is no net environmental benefit from doing so. Likewise, some of the EPA's non-priority pollutant 304(a) recommendations are for banned pesticides and Washington may not see the need to prioritize development of criteria for pollutants that are not reasonably expected to interfere with the designated uses of Washington's waters.

Conclusion

The EPA has authority to determine that conditions in a state's waters necessitate the federal promulgation of criteria for priority and non-priority pollutants. However, NWEA's petition has not persuaded the EPA that such an extraordinary step is warranted at this time. Given Washington's recent and planned activities to address water quality criteria in the state, the EPA concludes that the use of federal rulemaking authority to address the state's aquatic life criteria for priority and non-priority pollutants, motivated by generalized concerns about the length of time since the criteria were last updated, would not be the most effective or practical means of addressing Washington water quality, at this time. However, the EPA will continue to encourage Washington to adopt aquatic life criteria for priority and non-priority pollutants in future state rulemakings, especially instances where the EPA has corresponding 304(a) recommendations and those pollutants are likely to be present in Washington waters.